

## REMARKS/ARGUMENTS

In reply to the Office Action mailed September 21, 2006, Applicant respectfully requests reconsideration and allowance. In the Office Action, claims 1-20 were rejected for obviousness. In reply, Applicant has canceled claim 2 and amended claims 1, 4, 11, 17 and 20. Accordingly, claims 1-20 remain pending in the subject application.

Applicant would like to express his gratitude to Examiners Caldarola and Douglas for extending the courtesy of taking the time on November 30, 2006 to discuss the subject application over the telephone. It is believed that Applicant's undersigned representative was able to distinguish the references. Applicant will endeavor herein to represent what was discussed in the interview.

Independent claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 4,481,106 (the "Verachtert '106 patent") in view of U.S. Patent 4,019,869 (the "Morris patent"). Additionally, claim 17 was rejected as being unpatentable over the Verachtert '106 patent in view of U.S. Patent 4,199,440 (the "Verachtert '440 patent") and the Morris patent. Applicant respectfully traverses these rejections of claims 11 and 17. Claims 11 and 17 recite a fluid permeable shield that extends across the entire lateral cross-section of the reactor vessel and that all of the hydrocarbon product in aqueous alkaline solution pass through the fluid permeable shield. The Verachtert '106 patent does not disclose a fluid permeable shield that extends across the entire lateral cross-section of the reactor but instead discloses an annular shield 8 which defines an annular basket which contains a catalyst and an outer annulus from which an upper hydrocarbon phase is withdrawn through line 10. The design of the Verachtert '106 patent allows the hydrocarbon and caustic mixture to descend below the lower edge of the wall 7 through the screen 8 and up to the hydrocarbon outlet line 10 without contacting all of the catalyst that is disposed below the wall 7 and adjacent to the screen 8. Consequently, catalyst volume which is not contacted by the hydrocarbon is wasted. Whereas, in the claimed invention, no catalyst is wasted. The hydrocarbon that enters the reactor vessel through the inlet 52 descends through all of the catalyst bed before descending through the fluid permeable

screen to be separated. The rejection indicates that it would have been obvious to use the lateral screen 5 from the Morris patent in the replacement of the annular screen 8 in the Verachtert '106 patent. However, the Morris patent is designed to do two separations, one in the upper section 4 above the liquid barrier 16 and another separation below the liquid barrier 16. Hydrocarbon which formed in the upper section above the liquid barrier 16 is withdrawn through hydrocarbon transfer conduit 7 and transferred down below the liquid barrier 16 where an additional separation is performed to remove water that survived the initial separation above the liquid barrier 16. Accordingly, not all of the hydrocarbon from inlet 2 passes through the horizontal screen 5 as required by claims 11 and 17.

Accordingly, Applicant respectfully submits that if one of ordinary skill in the art contemplated substituting the horizontal screen 5 in the Morris patent for the annular screen 8 in the Verachtert '106 patent, then one of ordinary skill would also utilize the hydrocarbon transfer conduit 7 from the Morris patent in the Verachtert '106 patent because Verachtert requires hydrocarbon withdrawal to effect the first separation. In this case, the proposed combination of references would not pass all of the hydrocarbon and aqueous alkaline solution through the fluid permeable shield. With respect to claim 17, the Verachtert '440 patent also includes a hydrocarbon transfer conduit 5 which collects hydrocarbon and prevents hydrocarbon from passing through screen 6.

Applicant has also amended claims 11 and 17 to recite that the bed of catalyst is supported on the fluid permeable shield and that the reaction section is disposed above the separation section. These recitations further distinguish the Verachtert '106 patent as the Examiners requested in the interview. Support for the limitation that the bed of catalyst is supported on the fluid permeable shield is provided at page 21, lines 4-6, and support for the reaction section being disposed above the separation section is provided on page 21, lines 8-9 in the original disclosure. Accordingly, Applicant respectfully requests reconsideration and allowance of claims 11 and 17 and, for at least the same reasons, claims 12-16 and 18 depending therefrom.

Independent claims 1 and 20 were rejected for being obvious over the Morris patent in view of U.S. Patent 3,216,927 (the "Dresser patent"). Claim 1 has been amended to

include the limitations of claim 2 which include a recitation that the separation section is defined by the second end of the reactor vessel. Claim 1 has also been amended to recite the extension of the fluid permeable shield across the entire lateral cross-section of the reactor vessel which is supported on page 20, lines 20-21. Claim 1 has been further amended to recite the hydrocarbon outlet withdraws the hydrocarbon from the separation section from an outlet position between the fluid permeable shield and the second end of the reactor vessel. This amendment is supported by original claim 20. Applicant respectfully submits that none of the references discloses a hydrocarbon outlet from a separation section that is partially defined by the second side of the fluid permeable shield and the second end of the reactor vessel. For example, the Morris patent does not disclose a hydrocarbon outlet from a separation section which is partially defined by the screen 5 and the lower end of the vessel 1.

Claim 20 has the same limitations as amended claim 1 but has been further amended to indicate that the residual alkali removal unit is a water wash column. Support for this amendment is found on page 23, lines 4-6. None of the cited references further discloses that hydrocarbon effluent from a reactor vessel containing a bed of catalyst can be directed to a residual alkaline removal unit such as a water wash vessel without having to first be processed in a caustic settler. The Dresser patent teaches feeding hydrocarbon effluent from a treater-settler 14 that does not contain solid catalyst to a water-washed settler 6 via line 28. The Dresser patent does not suggest that hydrocarbon effluent from a reactor vessel with a solid catalyst bed is sufficiently free of caustic to be delivered to a water-wash vessel to obtain a hydrocarbon stream with sufficient purity, especially for jet fuel service. On the other hand, the vessel in the Morris patent contains a bed 4 of particulate catalyst from which the hydrocarbon is withdrawn through conduit 7 and passed to a separation section that serves as a settling tank therebelow which is integral with the vessel 1. A further separation is performed in the separation section and hydrocarbon is removed from the lower section through outlet 12. However, the Morris patent does not suggest that one of ordinary skill in the art should withdraw hydrocarbon through hydrocarbon transfer conduit 7 and direct that hydrocarbon directly to an alkaline

removal unit. The Morris patent requires a second separation before hydrocarbon is processed further outside of the vessel 1. Accordingly, Applicant respectfully submits that claims 1 and 20 are distinct from the cited reference. Applicant respectfully requests reconsideration and allowance of claims 1 and 20 and, for at least the same reasons, claims 3-10 which depend from claim 1.

For the foregoing reasons, Applicant respectfully requests reconsideration and allowance of claims 1 and 3-20. Should the Examiner have any further concerns regarding this application, please feel free to contact the undersigned.

Respectfully submitted,

  
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JCP/gm